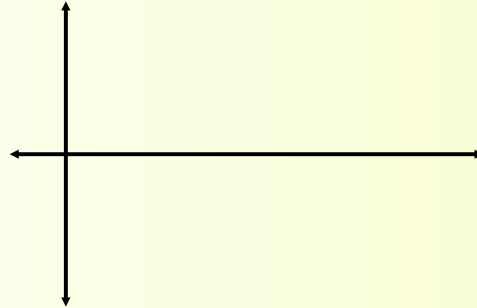
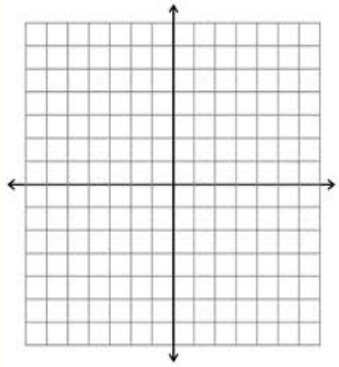


## Alg. 2 Warm Up #12-2

Graph (no grapher):

1.  $y = \log_2 x + 2$

2.  $y = 3 \sin 2x + 1$



## HW Questions:

- 9-25. Rearrange the equation  $y = 2x^2 + 8x + 5$  into a more useful form for graphing. State the locator point and draw the graph.

9-26. Solve this system for y and z:

$$4 \left( \frac{z+y}{2} + \frac{z-y}{4} \right) = 3 \cdot 4$$

$$\frac{4z-y}{2} + \frac{5z+2y}{11} = 3$$

$$2(z+y) + z - y = 12$$

$$2z + 2y + z - y = 12$$

$$3z + y = 12$$

9-27. Solve each equation.

a.  $\log_2(x) + \log_2(x-2) = 3$

b.  $\log(2x) - \log(x^2) = -2$

9-28. Convert the following angle measurements from degrees to radians.

a.  $30^\circ$

b.  $15^\circ$

c.  $-75^\circ$

d.  $630^\circ$

$$\log_{10} \left( \frac{2}{x} \right) = -2 \leftarrow \log_{10} \left( \frac{2x}{x^2} \right) = -2$$

$$10^{-2} = \frac{2}{x}$$

$$\frac{1}{100} = \frac{2}{x}$$

$$x = 200$$

$$10^{-2} = \frac{2x}{x^2}$$

$$\frac{1}{100} = \frac{2x}{x^2}$$

$$x^2 = 200x$$

$$x^2 - 200x = 0$$

$$x(x - 200) = 0$$

$$x = 0, 200$$

9-42. Factor and reduce to simplify  $\frac{3x+6}{x^2+7x+10}$ . Justify each step.

9-43. Simplify and add  $\frac{x-4}{x+2} + \frac{4x+12}{x^2+5x+6}$ . Justify each step.

9-44. Change the angle measurements below from radians to degrees or from degrees to radians.

a.  $144^\circ$

b.  $300^\circ$

c.  $\frac{5\pi}{9}$

d.  $\frac{17\pi}{12}$

e.  $\frac{19\pi}{2}$

f.  $220^\circ$

9-53. Solve the system of equations at right.

Elim x

$$4(2) + (1)(29y + 26z = 96)(17)$$

$$2(2) + (3)(17y + 9z = 75)(-29)$$

$$\left(\frac{1}{2}, 6, -3\right)$$

$$8x - 3y - 2z = -8$$

$$2 \cdot (-2x + 8y + 7z = 26)$$

$$4x + y - 5z = 23$$

$$\begin{array}{r} -8x + 32y + 28z = 104 \\ 4x + y - 5z = 23 \\ \hline 29y + 26z = 96 \end{array}$$

$$-4x + 16y + 14z = 52$$

9-56. If  $\cos \theta = \frac{8}{17}$ , find  $\sin \theta$ .

9-58. Solve each equation.

a.  $\frac{15}{x-2} = \frac{16}{x}$

b.  $\frac{1}{x} + \frac{1}{2x} = 9$

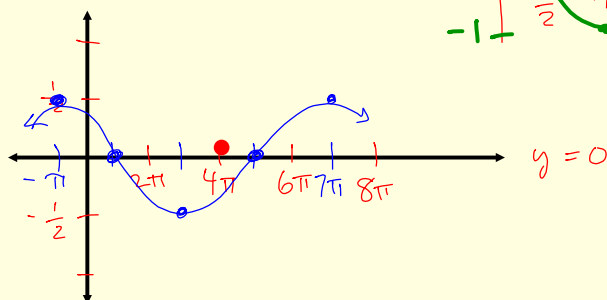
9-69. Graph at least two cycles of the following functions.

a.  $f(x) = 3 \sin 2(x - \frac{\pi}{4}) + 1$

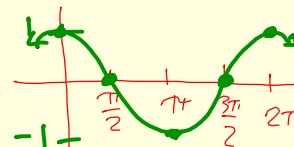
b.  $g(x) = \frac{1}{2} \cos \frac{1}{4}(x + \pi) + k$

Per =  $\frac{2\pi}{\frac{1}{4}}$   
 $= 8\pi$

b)



$y = \cos x$



9-77. Simplify each expression below.

a.  $3^{-2} \cdot 3^4$

b.  $3^{-4} \cdot 3^4$

c.  $(3^{-1} + 3^{-3}) \cdot 3^4$

d.  $\frac{3^{-2} - 3^{-1}}{3^{-3} - 3^{-4}}$

$$a^m \cdot a^n = a^{m+n}$$

$$\begin{aligned} 3^4 \cdot 3^{-1} + 3^4 \cdot 3^{-3} \\ 3^3 + 3^3 \\ 30 \end{aligned}$$

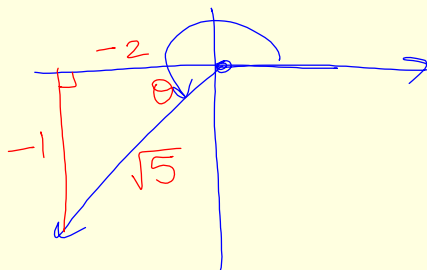
$$\frac{\frac{1}{9} - \frac{1}{3} \cdot \frac{3}{3}}{\frac{3}{3} \cdot \frac{1}{27} + \frac{1}{81}}$$

$$\frac{\frac{1}{9} - \frac{3}{9}}{\frac{3}{81} + \frac{1}{81}}$$

$$\frac{-\frac{2}{9}}{\frac{4}{81}}$$

$$-\frac{2}{9} \cdot \frac{81}{4} = \boxed{-\frac{9}{2}}$$

9-79. If  $\tan \theta = \frac{1}{2}$  and  $\pi \leq \theta \leq \frac{3\pi}{2}$ , what is the value of  $\sin \theta$ ?  $= \frac{-1 \cdot \sqrt{5}}{\sqrt{5} \cdot \sqrt{5}}$



$$= -\frac{\sqrt{5}}{5}$$

$$(-1)^2 + (-2)^2 = h^2$$

$$1 + 4$$

$$\sqrt{5} = h$$

HW: Finish the  
Yellow Classwork